

CLAIMS

- 1) A self-contained cooling unit for drinking water fountains, wherein the cooling unit comprises :
 - an outer casing forming a fluidtight chamber ;
 - 5 – a thermal exchange fluid held within the chamber ;
 - a source of cold energy transferable to the thermal exchange fluid ;
 - at least one drinking water conduit arranged within the chamber and having a drinking water inlet and a drinking water outlet outside of said chamber.
- 2) A self-contained cooling unit according to claim 1, wherein the fluidtight
10 chamber holding the thermal exchange fluid is divided into two sub-chambers, an inner sub-chamber being contained within an outer sub-chamber.
- 3) A self-contained cooling unit according to claim 1 or claim 2, wherein the
15 outer sub-chamber substantially surrounds an upper zone of the inner sub-chamber.
- 4) A self-contained cooling unit according to claim 3, wherein the outer sub-chamber surrounds an upper third of the inner sub-chamber.
- 5) A self-contained cooling unit according to claim 3, wherein the upper sub-chamber surrounds an upper half of the inner sub-chamber.
- 20 6) A self-contained cooling unit according to any one of the preceding claims, wherein the the thermal exchange fluid is provided with at least one flow passage within the chamber for flow of the thermal exchange fluid within the chamber.
- 7) A self-contained cooling unit according to claim 6, wherein the at least one
25 flow passage allows thermal exchange fluid to flow from the outer sub-chamber to the inner sub-chamber and vice-versa.
- 8) A self-contained cooling unit according to any one of the preceding claims, wherein the at least one drinking water conduit is located in an outer sub-chamber of the chamber.
- 30 9) A self-contained cooling unit according to any one of the preceding claims, wherein the at least one drinking water conduit is located in an inner sub-

chamber of the chamber.

- 10) A self-contained cooling unit according to any one of the preceding claims, wherein the source of cold energy transferable to the thermal exchange fluid is located on an external wall of the chamber.
- 5 11) A self-contained cooling unit according to claim 10, wherein the source of cold energy transferable to the thermal exchange fluid is located on an external wall of the inner sub-chamber.
- 12) A self-contained cooling unit according to any one of the preceding claims, wherein the source of cold energy transferable to the thermal
10 exchange fluid is located within the inner sub-chamber of the chamber.
- 13) A self-contained cooling unit according to any one of the preceding claims, wherein the source of cold energy transferable to the thermal exchange fluid is located within an exterior cavity formed by a wall of the inner sub-chamber.
- 15 14) A self-contained cooling unit according to claim 1, wherein the source of cold energy transferable to the thermal exchange fluid is a Peltier plate.
- 15) A self-contained cooling unit according to claim 1, wherein the source of cold energy transferable to the thermal exchange fluid is a dielectric cooler.
- 16) A self-contained cooling unit according to claim 1, wherein the source of
20 cold energy transferable to the thermal exchange fluid is an evaporator coil placed within an inner sub-chamber of the chamber.
- 17) A self-contained cooling unit according to claim 1, wherein an insulating material is provided on one side of the chamber between the source of cold energy located on an external wall, and the external wall of the chamber.
- 25 18) A self-contained cooling unit according to claim 1, further comprising a temperature sensor located within the chamber.
- 19) A self-contained cooling unit according to claim 1, wherein the thermal exchange fluid is water.
- 20) A self-contained cooling unit according to claim 1, wherein the at least
30 one drinking water conduit is arranged within the chamber in a coil.
- 21) A self-contained cooling unit according to claim 1, wherein the at least

one drinking water conduit has a regular undulating cross-section.

- 22) A self-contained cooling unit according to any one of the preceding claims, wherein the at least one drinking water conduit is arranged in a coil in the upper, outer sub-chamber around the upper half of the inner, lower sub-chamber.

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